

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): Weldable component of structural steel, characterized in that its chemical composition comprises, by weight:

$$0.10\% \leq C \leq 0.22\%$$

$$0.50\% \leq Si \leq 1.50\%$$

$$Al \leq 0.9\%$$

$$0\% \leq Mn \leq 3\%$$

$$0\% \leq Ni \leq 5\%$$

$$0\% \leq Cr \leq 4\%$$

$$0\% \leq Cu \leq 1\%$$

$$0\% \leq Mo + W/2 \leq 1.5\%$$

$$0.0005\% \leq B \leq 0.010\%$$

$$N \leq 0.025\%$$

optionally at least one element selected from V, Nb, Ta, S and Ca, at contents of less than 0.3%, and/or from Ti and Zr at contents of less than or equal to 0.5%, the remainder being iron and impurities resulting from the production operation,

the contents of ~~aluminium~~aluminum, boron, titanium and nitrogen, expressed in thousandths of %, of the composition also satisfying the following relationship:

$$B \geq \frac{1}{3} \times K + \underline{0.5} \underline{0.5}, \quad (1)$$

with $K = \text{Min}(I^*; J^*)$

$I^* = \text{Max}(0; I)$ and $J^* = \text{Max}(0; J)$

$I = \text{Min}(N; N - \underline{0.29} \underline{0.29}(Ti - 5))$

$J = \text{Min}\left(N; \underline{0.5} \underline{0.5}\left(N - \underline{0.52} \underline{0.52} Al + \sqrt{(N - \underline{0.52} \underline{0.52} Al)^2 + 283}\right)\right),$

the contents of silicon and ~~aluminium~~aluminum of the composition also complying with the following conditions:

if $C > 0.145$, then $Si + Al < 0.95$

and whose structure is bainitic, martensitic or martensitic-bainitic and also comprises from 3 to 20% of residual austenite.

2. (original): Steel component according to claim 1, characterized in that its chemical composition also satisfies the following relationship:

$$1.1\%Mn + 0.7\%Ni + 0.6\%Cr + 1.5(\%Mo + \%W/2) \geq 1 \quad (2)$$

3. (original): Steel component according to claim 2, characterized also in that its chemical composition satisfies the following relationship:

$$1.1\%Mn + 0.7\%Ni + 0.6\%Cr + 1.5(\%Mo + \%W/2) \geq 2 \quad (2)$$

4. (original): Steel component according to any one of claims 1 to 3, characterized in that its chemical composition also satisfies the following relationship:

$$\%Cr + 3(\%Mo + \%W/2) \geq 1.8.$$

5. (original): Steel component according to claim 4, characterized in that its chemical composition also satisfies the following relationship:

$$\%Cr + 3(\%Mo + \%W/2) \geq 2.0.$$

6. (withdrawn): Method for manufacturing a weldable steel component according to any one of claims 1 to 5, characterized in that

- the component is austenitized by heating at a temperature of from Ac_3 to $1000^{\circ}C$, and it is then cooled to a temperature of less than or equal to $200^{\circ}C$, in such a manner that, at the core of the component, the rate of cooling between $800^{\circ}C$ and $500^{\circ}C$ is greater than or equal to the critical bainitic velocity,

- optionally, tempering is effected at a temperature of less than or equal to Ac_1 .

7. (withdrawn): Method according to claim 6, characterized in that, at the core of the component, the cooling rate between $500^{\circ}C$ and a temperature of less than or equal to $200^{\circ}C$ is from $0.07^{\circ}C/s$ to $5^{\circ}C/s$.

8. (withdrawn): Method according to claim 6 or 7, characterized in that tempering is effected at a temperature of less than $300^{\circ}C$ for a period of time of less than 10 hours, at the end of the cooling operation to a temperature of less than or equal to $200^{\circ}C$.

9. (withdrawn): Method according to claim 6 or 7, characterized in that no tempering is carried out at the end of the cooling operation to a temperature of less than or equal to $200^{\circ}C$.

10. (withdrawn): Method for manufacturing a weldable steel plate according to any one of claims 1 to 5, the thickness of which is from 3 mm to 150 mm, characterized in that the plate is quenched, the cooling rate V_R at the core of the component between 800°C and 500°C and the composition of the steel being such that:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) + \log V_R \geq 5.5.$$

11. (withdrawn): Method for manufacturing a weldable steel plate according to claim 10, the thickness of which is from 3 mm to 150 mm, characterized, in addition, in that the plate is quenched, the cooling rate V_R at the core of the component between 800°C and 500°C and the composition of the steel being such that:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) + \log V_R \geq 6.$$